

DUSTSTORMS IN THE UNITED STATES, APRIL 1936

By R. J. MARTIN

Dusty conditions which had prevailed during the preceding several months continued into April, but with decreased frequency and mostly with diminished severity. A comparison of the April chart with that for March shows that the center of maximum duststorm frequency migrated slightly to the north, while the greatest number reported diminished from more than 22 in northern Texas in March to 14 in western Oklahoma in April. The extent of the area affected by dense dust is also less; dense dust was reported only occasionally to eastward of the Mississippi River, and no reports of severe duststorms were received from the Lake region, the upper Ohio Valley, or New England.

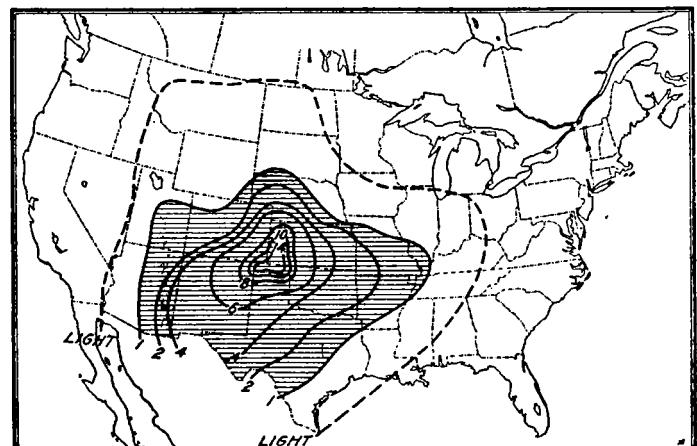
The shaded area on the April chart delineates those sections in which dense dust was reported, and the lines show the number of occurrences; the larger area, within the dotted line, includes stations reporting only light dust or dusty conditions. Such conditions prevailed on a varying number of days, ranging from only one in portions of Mississippi, Ohio, Tennessee, and southern Texas, to 3 in Illinois, 5 in Montana, 9 in western Nebraska, and 19 in portions of Oklahoma.

A few of the April storms in Colorado were comparable in severity with those of the preceding month in that State. There were complaints of crop damage in several western States; and traffic was hindered, at times for several hours, by decreased visibility. There were several reports of snow tinged with dust; "red snow" fell in Mesa Verde National Park early in the month.

Considerable damage was done to crops in Curry County, N. Mex., by a dust "front" which entered the extreme northeastern corner of the State on the 9th and had moved southward to the extreme southeastern corner on the following day; a severe duststorm on the 23d reduced visibility to one-fourth mile in many sections. The most severe New Mexico storm of the month occurred between the Rio Grande and the eastern State line, on the 25th and 26th; the dust extended upward about 7,000 feet and reduced visibility to approximately one-fourth

mile. Dusty conditions were reported at Roswell, N. Mex. on 14 days.

No damage resulted from a duststorm at Pueblo, Colo., on the 15th, where the cloud reached a height of 10,000 feet; but the general storm of the 3d, which enveloped east-central counties from the Kansas border to the one hundred and fourth meridian, reduced visibility to 100 yards in portions of the lower Arkansas Valley, where



Number of days with duststorms, or dusty conditions, April 1936.

the dust continued to blow for 10 consecutive hours. In eastern Powers County on the 4th visibility was zero much of the time between 5 p. m. and 10 p. m., and motor traffic was at a standstill on several highways.

Dust damage, mostly erosion, in Oklahoma was confined to the panhandle counties and portions of Harper, Woodward, and Ellis Counties. No estimates of damage were received.

There were no reports of loss of life from the duststorms of the month, although considerable human discomfort resulted.

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SOLAR OBSERVATIONS

SOLAR RADIATION OBSERVATIONS DURING APRIL 1936

By IRVING F. HAND, Assistant in Solar Radiation Investigations

For a description of instruments employed and their exposures, the reader is referred to the January 1935, REVIEW, page 24.

Table 1 shows that solar radiation intensities averaged above normal at all three Weather Bureau stations.

Table 2 shows an excess in the amount of total solar and sky radiation at all stations with the exception of Washington, Madison, New York, Blue Hill, and Friday Harbor.

Polarization measurements made at Washington on 3 days give a mean of 61 percent with a maximum of 64 percent on the 16th. At Madison, observations obtained on three days give a mean of 63 percent with a maximum of 71 percent on the 22d. All of these values are slightly above the April normals for the two stations.

TABLE 1.—Solar radiation intensities during April 1936

[Gram-calories per minute per square centimeter of normal surface]

WASHINGTON, D. C.

Date	Sun's zenith distance									Noon	
	75th mer. time	Air mass									
		A. M.				P. M.					
e	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0		
Apr. 4	mm.	cat.	cat.	cat.	cat.	cat.	cat.	cat.	cat.		
Apr. 4	1.96	1.04	1.13	1.27	1.45						
Apr. 8	1.37	0.93	1.03	1.11	1.32	1.54					
Apr. 16	4.37	.70	.81	.91	1.29	1.56					
Apr. 20	4.57										
Apr. 22	3.63	.62	.78	.88	1.08	1.39	1.01	.79			
Apr. 24	3.81	.42	.53	.63	1.02	1.46	1.10	.94			
Apr. 25	2.74						.88	.70			
Apr. 27	3.63	.71	.84	.96							
Means		.68	.84	.94	1.20	1.48	1.00	.79			
Departures		-.01	+.05	+.05	+.12	+.12	-.09	-.10			

TABLE 1.—Solar radiation intensities during April 1936—Con.
MADISON, WIS.

Date	Sun's zenith distance									Local mean solar time	
	75th mer. time	Air mass									
		A. M.				P. M.					
e	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0		
Apr. 6	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.		
Apr. 6	1.68	1.18	1.28	1.45	1.63						
Apr. 11	6.50					1.56					
Apr. 14	8.18					1.64					
Apr. 16	3.63										
Apr. 17	3.30										
Apr. 18	3.00										
Apr. 22	2.87										
Apr. 23	3.15										
Apr. 29	11.38										
Means											
Departures		(1.18)	1.20	1.30	1.55	(1.00)					
		+.27	+.17	+.08	.11	-.19					

LINCOLN, NEBR.

Apr. 3	1.32		1.05	1.24	1.38	1.58				1.88	
Apr. 6	1.88		1.14	1.25	1.43					1.68	
Apr. 7	1.37						1.20	1.03	0.89	0.78	
Apr. 10	4.95									3.98	
Apr. 14	5.56	.71	.85	1.00	1.15	1.54				4.37	
Apr. 16	2.74	.87	.99	1.13	1.39	1.60				2.16	
Apr. 17	2.36						1.27	1.57	1.24	2.36	
Apr. 18	2.26	.84	.94	1.07	1.31	1.57				2.62	
Apr. 20	6.76	.26	.42	.64	.96	1.20				7.04	
Means											
Departures		.67	.90	1.04	1.26	1.50	1.22	.97	.84	.73	
		-.04	+.08	+.07	+.07	+.05	+.06	+.01	+.02	+.04	

BLUE HILL, MASS.

Apr. 1	2.2						1.20	1.03	0.94		2.3
Apr. 4	2.2						1.02	1.18	1.13	1.03	2.2
Apr. 8	2.8						1.10	1.27	1.40	.94	2.9
Apr. 9	3.3						1.08	1.16			
Apr. 14	3.6						1.17	1.46	1.26		3.2
Apr. 18	4.0	.88	.98	1.11	1.25	1.40					4.4
Apr. 19	4.8	.88	.99	1.11	1.27	1.43					4.0
Apr. 20	3.8	.82	.91	1.00	1.19	1.29					3.0
Apr. 22	2.9						1.17	1.31	1.51		2.4
Apr. 23	2.9						1.27	1.44	1.49	1.23	2.8
Apr. 24	3.6						1.19	1.47	1.27	1.06	2.1
Apr. 25	2.6						1.27		1.09		2.6
Apr. 27	2.9						1.21	1.32	1.12	.95	3.8
Apr. 29	9.6						1.07	.80			11.1
Means							.86	.98	1.10	1.22	1.35
Departures											.98

*Extrapolated.